

Those skilled in the art will appreciate that embodiments of the present invention embrace a variety of system and apparatus configuration to perform the methods disclosed herein.

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes that come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed is:

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1. A bale handling apparatus comprising:
  - a frame;
  - a platform for supporting a plurality of bales, wherein the platform is pivotably coupled to the frame to selectively move between a horizontal position and a vertical position; and
  - 5 a loading mechanism pivotably coupled to the platform, wherein the loading mechanism is configured to receive a bale.

2. A bale handling apparatus as recited in claim 1, further comprising a sliding mechanism that is configured to move a bale from the loading mechanism to the platform, wherein the sliding mechanism is coupled to the platform and to the loading mechanism.

3. A bale handling apparatus as recited in claim 2, wherein the sliding mechanism comprises:
  - a chain;
  - a sprocket configured to receive the chain, wherein the sprocket is pivotably coupled to the platform; and
  - 10 a push bar coupled to the chain, wherein the push bar is configured to contact the bale.

4. A bale handling apparatus as recited in claim 3, wherein the push bar comprises at least one of:

(i) a toothed edge that is configured to poke into a surface of the bale;

and

(ii) a lip that is configured to maintain the contact with the bale.

5. A bale handling apparatus as recited in claim 3, further comprising a chain tensioner that is configured to maintain the chain taut.

6. A bale handling apparatus as recited in claim 1, wherein the loading mechanism comprises:

a loading platform; and

one or more arms pivotably coupled to the loading platform.

7. A bale handling apparatus as recited in claim 6, wherein the loading platform further comprises one or more grabbing hooks that are configured to couple bale to the loading platform.

8. A bale handling apparatus as recited in claim 1, wherein the frame includes a tandem axle.

9. A bale handling apparatus as recited in claim 1, further comprising an unloading mechanism coupled to the frame.

10. A bale handling apparatus as recited in claim 9, wherein the unloading mechanism comprises a push-off mechanism.

11. A bale handling apparatus as recited in claim 10, wherein the push-off mechanism is powered by a hydraulic cylinder and comprises a shaft that is configured to slide in relation with a guide.

12. A bale handling apparatus as recited in claim 1, further comprising a control system coupled to the frame.

13. A bale handling apparatus as recited in claim 12, wherein the control system includes at least one of:

- (i) a computer device;
- (ii) a sensor; and
- (iii) a switch.

20 14. A bale handling apparatus as recited in claim 13, wherein the computer device is a controller.

15. A method for handling bales, the method comprising the steps for:  
receiving a bale at a loading mechanism;  
selectively pivoting the loading mechanism from a vertical position to a horizontal  
position, wherein the pivoting is performed at a coupling of the loading mechanism with  
5 a platform that is configured to support the bale; and  
engaging a sliding mechanism to move the bale from the loading mechanism onto  
the platform to locate the bale on the platform.

16. The method as recited in claim 15, further comprising the steps for:  
10 receiving a second bale at the loading mechanism;  
selectively pivoting the loading mechanism with the second bale from the vertical  
position to the horizontal position, wherein the pivoting is performed at  
the coupling of the loading mechanism with the platform, which is  
50 configured to support the second bale; and  
engaging the sliding mechanism to move the second bale from the loading  
mechanism onto the platform to locate the second bale on the platform.

17. The method as recited in claim 15, further comprising the step for  
selectively pivoting the platform from a horizontal platform position to a vertical platform  
20 position.

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18. The method as recited in claim 17, further comprising the step for engaging a pushing mechanism to push the bale away from the platform while the platform is in the vertical platform position.

5 19. The method as recited in claim 15, wherein the step for engaging the sliding mechanism is performed by a computer device.

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20. A computer program product for implementing within a computer system  
a method for handling bales, the computer program product comprising:  
a computer readable medium for providing computer program code means utilized  
to implement the method, wherein the computer program code means is  
comprised of executable code for implementing at least one of the steps  
for:  
selectively implementing a pivoting of a loading mechanism from a  
vertical position to a horizontal position, wherein the loading  
mechanism has received a bale, and wherein the pivoting is  
performed at a coupling of the loading mechanism with a platform  
that is configured to support the bale;  
selectively engaging a sliding mechanism to move the bale from the loading  
mechanism onto the platform to locate the bale on the platform;  
selectively pivoting the platform from a horizontal platform position to a  
vertical platform position; and  
engaging a pushing mechanism to push the bale away from the platform  
while the platform is in the vertical platform position to unload the  
bale.